

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 2998.P035PCT	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2004/035863	International filing date (<i>day/month/year</i>) 27 October 2004 (27.10.2004)	Priority date (<i>day/month/year</i>) 31 October 2003 (31.10.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SONICS, INC.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 11 sheets, including this cover sheet.																								
	In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 80%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 01 May 2006 (01.05.2006)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin: 10px 0;">Dorothee Mülhausen</div> Telephone No. +41 22 338 87 40

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 11 AUG 2005

PCT WPP PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/035863

International filing date (day/month/year)
27.10.2004

Priority date (day/month/year)
31.10.2003

International Patent Classification (IPC) or both national classification and IPC
G06F13/00, G06F13/16

Applicant
SONICS, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1b/s(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/035863

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/035863

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 16-32

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the whole application or for said claims Nos. 16-32
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
- ☒ the tables related to the nucleotide and/or amino acid sequence listing; if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See separate sheet for further details

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/035863

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-15

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2,6,13
	No: Claims	1,3-5,7-12,14,15
Inventive step (IS)	Yes: Claims	
	No: Claims	1-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/035863

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item IV

Lack of unity of invention

1. It is considered that the following two separated inventions or groups of inventions are claimed in the present application:

Invention 1

Claims 1 to 15 are directed to a method and corresponding system for satisfying a quality of service contract between an initiator and a target.

Invention 2

Claims 16 to 32 are directed to a method and corresponding system for tracking services between an initiator and a target.

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) due to the fact that the two inventions deal with different technical problems and do not share any special technical features within the meaning of Rule 13.2 PCT, second sentence. Consequently, the set of claims does not satisfies the requirement of unity of invention, Rule 13 PCT.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

2. Reference is made to the following documents. Their numbering will be adhered to in the rest of the procedure:

D1: US 2002/138687 A1 (YANG LIUXI ET AL) 26 September 2002 (2002-09-26)

D2: IVO ADAN, JACQUES RESING: "Queueing Theory" 14 February 2001 (2001-02-14), EINDOVEN UNIVERSITY OF TECHNOLOGY , EINDOVEN , XP002329104

D3: US 2003/074519 A1 (WEBER WOLF-DIETRICH) 17 April 2003 (2003-04-17)

D4: LAMPORT L: "HOW TO MAKE A MULTIPROCESSOR COMPUTER THAT

CORRECTLY EXECUTES MULTIPROCESS PROGRAMS" IEEE
TRANSACTIONS ON COMPUTERS, IEEE INC. NEW YORK, US, vol. C-28,
no. 9, September 1979 (1979-09), pages 690-691, XP009029909 ISSN: 0018-
9340

3. Document **D1** (see in particular the passages cited in the International Search Report) discloses, according to **all** the features of **claim 1**, a method for satisfying a Quality of Service contract with a initiator (see in particular paragraph 22, lines 1 to 4) comprising:
- receiving a request from an initiator in a first time less that or equal to an ordinal number times an arrival interval, wherein the ordinal number signifies a position of the request among a group of requests (see in particular "Rqst Queues" in figure 2 and paragraph 25; elements "307, 309, 313, 315 and 317" in figure 3 and paragraph 27); and
 - returning the request that has been serviced to the initiator in a second time less that or equal to a constant term plus the ordinal number times a service interval (see in particular page 2, paragraph 27, line 6 to page 3, paragraph 27, line 2 and figure 3; see paragraph 24 for the constant term).

The subject-matter of claim 1 is therefore **not** new, Article 33(1), (2) PCT.

4. The same considerations as made in paragraph 3. above for independent claim 1 also apply to **independent claim 7**, since said claim includes the same feature combination of claim 1 in terms of a system adapted to perform each of the steps of the method of claim 1.

The subject-matter of claim 7 is therefore **not** new, Article 33(1), (2) PCT.

5. It should be noted that even if the Applicant intended to argue novelty of claims 1 and 7 based on minor differences between the features of said claims and those disclosed in document D1, the subject-matter of said claims would not involve an

inventive step, see Article 33 (1), (3) PCT, having regard to the disclosure of document D1 and the normal knowledge of the person skilled in the art of queueing, see e.g. document D2, which discloses the basic principle of a single server queue. In fact, claims 1 and 7 only claim that the n -th request arriving at a time $t_1 = n \cdot t_a$, where t_a is the time of arrival, should be processed at a time $t_2 = k + n \cdot t_s$, where k is a constant (i.e. delays arising out of propagation, device response times, etc.) and t_s is a serving time, which is the basic concept of a single server queue.

Furthermore, also the combination of document **D3** (see in particular the passages cited in the International Search Report), which describes a method for guaranteeing quality of service for a plurality of initiator, and document **D4**, which discloses the concept of Sequential Consistency, would render not inventive the subject-matter of claims 1 and 7.

6. Dependent **claims 2 to 6 and 8 to 15** do not contain any additional features which, in combination with the features of the claims to which they respectively refer, meet the requirement of the PCT with respect to inventive step (see Article 33 (1) and (3) PCT) for the reason that the subject-matter of said claims is **either** in principle derivable from the disclosure of document **D1** or document **D2** **or** represents simple design details which are generally known to the person skilled in the art of memory access scheduling.

Due to the above reasons, dependent claims 2 to 6 and 8 to 15 do **not** meet the requirement of Article 33 PCT.

7. It is not at present apparent which part of the application could serve as a basis for a new set of claims meeting the requirements of Article 33 PCT. Should the Applicant nevertheless regard some particular matter as new and inventive, a single independent claim per category should be filed taking account of Rule 6.3 (b) PCT. The Applicant is requested to indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof.

Re Item VII

Certain defects in the international application

8. Should the Applicant intend to file a new set of claims, the following requirements should also be taken into consideration:
 - 8.1 The ultimately adopted main claims should be drafted in the proper two-part "characterised" form recommended by Rule 6.3 (b),(I),(ii) PCT, having a preamble that correctly reflects the nearest prior art, presumably that represented by the above noted D1.
 - 8.2 Reference signs in parentheses should be inserted in the claims to increase their intelligibility, Rule 6.2 (b) PCT. This applies both the preamble and characterising portion (see PCT-Guidelines for Preliminary Examination, PG-III, 4.11) and to method claims in as far as they refer to apparatus features.
 - 8.3 The opening part of the description should be brought into agreement with any independent claims (see Rule 5.1 (a) PCT).
 - 8.4 To meet the requirements of Rule 5.1 (a) (ii) PCT, the most relevant prior art, i.e. documents D1 and D2, should be acknowledged by reference and briefly discussed in the introductory part of the description, preferably in such a way that the inventive merit of what is claimed can be readily understood.
 - 8.5 The general "*spirit and scope*" statement in the description on page 16, paragraph 42 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (see Article 6 PCT) when used to interpret them. This statement should therefore be deleted to remove this inconsistency.
 - 8.6 Special care should be taken to avoid giving rise to further objections by the inadvertent addition of subject-matter (see Article 34.2 (b) PCT).

- 8.7 To facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the Applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).
- 8.8 The Applicant is requested to file amendments by way of replacement pages in the manner stipulated by Rule 66.8(a) PCT.
- 8.9 Any information the Applicant may wish to submit concerning the subject-matter of the invention, for example further details of its advantages or of the problem it solves, and for which there is no basis in the application as filed, should be confined to the letter of reply and not be incorporated into the application (see Article 34(2)(b) PCT).
- 8.10 Moreover, the Applicant's attention is drawn to the fact that, as a consequence of Rule 66.8(a) PCT the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.